

appreciated that the control unit included in video recorder 31 modifies the copy generation signal from $S_2=10$ to $S_2=01$; and the video signal with the modified copy generation signal is recorded by video recorder 31. As shown in FIG. 30, the copyright information signal $S_1=1$ likewise is recorded by recorder 31. Now, when the video signal which had been recorded by recorder 31 is reproduced and supplied to video recorder 32 for re-recording, the count represented by copy generation signal $S_2=01$ is decremented by the control unit included in recorder 32 to the count $S_2=00$; and this decremented count, together with the copyright information signal $S_1=1$, is superposed on the video signal played back from video recorder 31 and recorded by video recorder 32. However, when the video signal recorded by recorder 32 is reproduced, it cannot be re-recorded by, for example, video recorder 33, because $S_1=1$ and $S_2=00$; and this information is detected by the control unit included in video recorder 33 to inhibit that recorder from re-recording the video signal. Consequently, only two generations of the video signal may be recorded by video recorders 31 and 32, respectively, but a third generation is inhibited.

Finally, and as represented by FIG. 31, if the superposed copyright information and copy generation signals included in the video signals supplied by source 30 are assumed to be $S_1=1$ and $S_2=11$, then three generations of successive copies of this video signal may be made. A first generation is recorded by video recorder 31; but the control unit therein modifies the copy generation signal from $S_2=11$ to $S_2=10$. This modified copy generation signal together with the copyright information signal are superposed on the video signal recorded by video recorder 31.

When the video signal that had been recorded by video recorder 31 is reproduced and supplied to video recorder 32 for re-recording, it is appreciated that video recorder 32 modifies the copy generation signal from $S_2=10$ to $S_2=01$. This modified copy generation signal together with the copyright information signal $S_1=1$ are superposed on the video signal reproduced by video recorder 31 and recorded by video recorder 32.

Similarly, when the video signal which had been recorded by video recorder 32 is reproduced to be re-recorded by recorder 33, the control unit included in recorder 33 modifies the copy generation signal from $S_2=01$ to $S_2=00$. The modified copy generation signal and copyright information signal $S_1=1$ are recorded by video recorder 33.

Now, however, when the video signal which had been recorded by recorder 33 is reproduced to be re-recorded by recorder 34, the status of S_1 and S_2 is detected by the control unit included in video recorder 34; and since $S_1=1$ and $S_2=00$, video recorder 34 is inhibited from re-recording the video signal that had been recorded by video recorder 33. As a consequence, only three generations of the video signal provided by source 30 may be recorded, namely the first generation by recorder 31, the second generation by recorder 32 and the third generation by recorder 33. No further generations of copies may be made.

It will be appreciated that in the block diagrams shown in FIGS. 27-31, each video recorder includes the circuitry shown in FIG. 21 in the recording channel thereof and also the circuitry shown in FIG. 23 in the reproducing channel thereof. Hence, if the copyright information signal supplied to a video recorder is $S_1=1$, the circuitry included in the recording channel operates to decrement the count represented by the copy generation signal S_2 . Of course, if $S_2=00$, the count represented thereby is not decremented and, moreover, the video recorder is inhibited from recording the video signal.

While the present invention has been particularly shown and described with reference to preferred embodiments, it will be readily appreciated that various modifications may be made without departing from the spirit and scope of the invention. For example, it may be preferable to omit the copyright information signal S_1 and simply control the number of successive generations of copies that can be made from the video signal as a function of the copy generation signal S_2 .

It is intended that the appended claims be interpreted so as to cover the embodiments which have been discussed above, all variations and modifications which have been described or suggested, and all equivalents thereto.

What is claimed is:

15. A method of processing a video signal to selectively permit copying thereof, said video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by said plural-bit mode number, said method comprising the steps of generating copyright information data indicative of whether the viewable picture is subject to copyright; generating copy generation data indicative of the number of successive generations of copies that can be made from the processed video signal; and setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce said processed video signal.
20. The method of claim 1 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in respectively different line intervals.
25. The method of claim 2 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.
30. The method of claim 2 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.
35. The method of claim 1 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.
40. The method of claim 1 wherein said copy generation signal is a plural bit signal.
45. A video signal record medium having recorded thereon a video signal comprised of an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags, wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, predetermined bits of the associated plural-bit data flags represent copyright information and copy generation information, and when said plural-bit mode number classifies said associated plural-bit data or data flags as data, said predetermined bits represent other information; copyright

19

information data indicative of whether the viewable picture is subject to copyright; and copy generation information indicative of the number of successive generations of copies that can be made from the recorded video signal, said copyright information and copy generation information being said predetermined bits in said non-picture portion.

8. The record medium of claim 7 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in respectively different line intervals.

9. The record medium of claim 8 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

10. The record medium of claim 8 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

11. The record medium of claim 7 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in the same line interval.

12. The record medium of claim 7 wherein said copy generation signal is a plural bit signal.

13. A method of recording a video signal that may be selectively copied, said video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by said plural-bit mode number, said method comprising the steps of generating copyright information data indicative of whether the viewable picture is subject to copyright; generating copy generation data indicative of the number of successive generations of copies that can be made from the video signal; setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce a processed video signal; and recording said processed video signal on a record medium.

14. The method of claim 13 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in respectively different line intervals.

15. The method of claim 14 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

16. The method of claim 14 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

17. The method of claim 13 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

18. The method of claim 13 wherein said copy generation signal is a plural bit signal.

19. A method of selectively recording a video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking

20

identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags, wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that 5 when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, predetermined bits of the associated plural-bit data flags represent copyright information indicative of whether the viewable picture is subject to copyright and copy generation information indicative of 10 the number of successive generations of copies that can be made from the video signal, and when said plural-bit mode number classifies said associated plural-bit data or data flags as data, said predetermined bits represent other information, said method comprising the steps of detecting said copyright 15 information and said copy generation information; modifying the predetermined bits to indicate a decremented number of successive generations of copies that can be made from the video signal if said copyright information indicates that the viewable picture is subject to copyright; recording the 20 video signal having said copyright information and said modified copy generation information in said VBID data; and selectively inhibiting the recording of the video signal when said copyright information indicates that said viewable picture is subject to copyright and the detected copy generation information indicates that no successive generations of copies may be made from the video signal.

20. The method of claim 19 wherein said step of modifying the predetermined bits comprises generating new copy generation information indicative of one less than the number 30 of successive generations of copies which are indicated by the detected copy generation information, and superposing said new copy generation information in said VBID data of the video signal.

21. The method of claim 20 further comprising the steps 35 of regenerating the detected copyright information, and superposing said regenerated copyright information in said VBID data of the video signal.

22. The method of claim 19 wherein said video signal contains line intervals and said copyright information and 40 said copy generation information are superposed in VBID data in respectively different line intervals.

23. The method of claim 22 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

24. The method of claim 22 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

25. The method of claim 19 wherein said video signal 50 contains line intervals and said copyright information and said copy generation information are superposed in VBID data in the same line interval.

26. The method of claim 19 wherein said copy generation signal is a plural bit signal.

27. A method of reproducing a video signal having an effective picture portion and a non-picture portion and containing copy protection information representing whether a video picture derived from said video signal is subject to copyright and whether successive generations of 60 copies can be made from said video signal, said method comprising the steps of playing back said video signal from a record medium; detecting said copy protection information in the played back video signal; generating copyright information data indicative of whether said video picture is subject to copyright; generating copy generation data indicative of the number of successive generations of copies that can be made from said played back video signal; setting both

21

said copyright information data and said copy generation data as predetermined bits of plural-bit data flags which are associated with and classified by a plural-bit mode number, said plural-bit data flags and plural-bit mode number being included in vertical blanking identifying (VBID) data, and said predetermined bits being used to represent other information as a function of the classification of said plural-bit data flags by said plural-bit mode number; and disposing said VBID data in the non-picture portion of said played back video signal.

28. The method of claim 27 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in respectively different line intervals.

29. The method of claim 28 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

30. The method of claim 28 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

31. The method of claim 27 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

32. The method of claim 27 wherein said copy generation signal is a plural bit signal.

33. The method of claim 27 wherein said copy protection information comprises recorded copyright information data and recorded copy generation data, both included in VBID data in the non-picture portion of the video signal on said record medium, and both being detected to cause the detected copyright information data and copy generation data to be set as said predetermined bits in the VBID data of said played back video signal.

34. Apparatus for processing a video signal to selectively permit copying thereof, said video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by said plural-bit mode number, said apparatus comprising means for generating copyright information data indicative of whether the viewable picture is subject to copyright; means for generating copy generation data indicative of the number of successive generations of copies that can be made from the processed video signal; and means for setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce said processed video signal.

35. The apparatus of claim 34 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in respectively different line intervals.

36. The apparatus of claim 35 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

37. The apparatus of claim 35 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

22

38. The apparatus of claim 34 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

39. The apparatus of claim 34 wherein said copy generation signal is a plural bit signal.

40. Apparatus for recording a video signal that may be selectively copied, said video signal having an effective picture portion containing useful picture information from

10 which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags wherein said plural-bit mode number selectively classifies said associated plural-

15 bit data or data flags as data or flags such that predetermined bits of said associated plural-bit data or data flags represent different information as a function of the classification by

20 said plural-bit mode number, said apparatus comprising means for generating copyright information data indicative of whether the viewable picture is subject to copyright; means for generating copy generation data indicative of the

25 number of successive generations of copies that can be made from the video signal; means for setting said predetermined bits as the copyright information data and the copy generation data when said plural-bit mode number classifies said associated plural-bit data or data flags as flags, thereby to produce a processed video signal; and means for recording said processed video signal on a record medium.

41. The apparatus of claim 40 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in respectively different line intervals.

42. The apparatus of claim 41 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

43. The apparatus of claim 41 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

44. The apparatus of claim 40 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

45. The apparatus of claim 40 wherein said copy generation signal is a plural bit signal.

46. Apparatus for selectively recording a video signal having an effective picture portion containing useful picture information from which a viewable picture is displayed and a non-picture portion in which is disposed vertical blanking identifying (VBID) data comprised of a plural-bit mode number and associated plural-bit data or data flags, wherein said plural-bit mode number selectively classifies said associated plural-bit data or data flags as data or flags such that when said plural-bit mode number classifies said associated

50 plural-bit data or data flags as flags, predetermined bits of the associated plural-bit data flags represent copyright information indicative of whether the viewable picture is subject to copyright and copy generation information indicative of the number of successive generations of copies that can be made from the video signal, and when said plural-bit mode number classifies said associated plural-bit data or data flags as data, said predetermined bits represent other information, said apparatus comprising means for detecting said copy

55 right information and said copy generation information; means for modifying the predetermined bits to indicate a decremented number of successive generations of copies that can be made from the video signal if said copyright

23

information indicates that the viewable picture is subject to copyright; means for recording the video signal having said copyright information and said modified copy generation information in said VBID data; and means for selectively inhibiting the recording of the video signal when said copyright information indicates that said viewable picture is subject to copyright and the detected copy generation information indicates that no successive generations of copies may be made from the video signal.

47. The apparatus of claim 46 wherein said means for modifying the predetermined bits comprises means for generating new copy generation information indicative of one less than the number of successive generations of copies which are indicated by the detected copy generation information, and means for superposing said new copy generation information in said VBID data of the video signal.

48. The apparatus of claim 47 wherein said means for recording includes means for regenerating the detected copyright information, and means for superposing said regenerated copyright information in said VBID data of the video signal prior to the recording of said video signal.

49. The apparatus of claim 46 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in respectively different line intervals.

50. The apparatus of claim 49 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

51. The apparatus of claim 49 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

52. The apparatus of claim 46 wherein said video signal contains line intervals and said copyright information and said copy generation information are superposed in VBID data in the same line interval.

53. The apparatus of claim 46 wherein said copy generation signal is a plural bit signal.

54. Apparatus for reproducing a video signal having an effective picture portion and a non-picture portion and containing copy protection information representing whether a video picture derived from said video signal is subject to copyright and whether successive generations of copies can be made from said video signal, said apparatus comprising means for playing back said video signal from a record medium; means for detecting said copy protection

24

information in the played back video signal; means for generating copyright information data indicative of whether said video picture is subject to copyright; means for generating copy generation data indicative of the number of successive generations of copies that can be made from said played back video signal; means for setting both said copyright information data and said copy generation data as predetermined bits of plural-bit data flags which are associated with and classified by a plural-bit mode number, said plural-bit data flags and plural-bit mode number being included in vertical blanking identifying (VBID) data, and said predetermined bits being used to represent other information as a function of the classification of said plural-bit data flags by said plural-bit mode number; and disposing said VBID data in the non-picture portion of said played back video signal.

55. The apparatus of claim 54 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in respectively different line intervals.

56. The apparatus of claim 55 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in the same field interval.

57. The apparatus of claim 55 wherein said video signal contains frame intervals, each formed of field intervals, and said different line intervals are in different field intervals of the same frame interval.

58. The apparatus of claim 54 wherein said video signal contains line intervals and said copyright information data and said copy generation data are superposed in VBID data in the same line interval.

59. The apparatus of claim 54 wherein said copy generation signal is a plural bit signal.

60. The apparatus of claim 54 wherein said copy protection information comprises recorded copyright information data and recorded copy generation data, both included in VBID data in the non-picture portion of the video signal on said record medium, and said means for detecting is operable to detect both said copyright information data and copy generation data in the played back video signal; and said means for setting is operable to set as said predetermined bits the detected copyright information data and copy generation data in the VBID data of said played back video signal.

* * * * *